



**Joshua Lederberg**

# Swift Biological Advance Can Be Bent to Genocide

THE PHRASE "germ warfare" evokes a moral revulsion which is not strictly justified. War is already awful; how nice it would be to bypass its blood and guts and evoke some clean, almost symptomless disease instead.

From a military standpoint, the ideal agent for BW (biological warfare) would be a completely non-lethal but highly contagious virus that merely stupefied its victims for a few hours or days and for which the good guys had a reliable antidote or preventive antibody. This hypnovirus is a logically plausible ideal just as is the thought of using mind-altering drugs as chemical warfare agents. (LSD was in fact studied by the U.S. Army long before the hippies discovered it.)

Having the hypnovirus would, however, make very little difference to the maneuverings of the great powers, with their highly automated nuclear missile systems. Could we persuade the Kremlin to exclude biological attack from the threats it intends to retaliate against? The impact of hypnovirus on small-country politics, and on the "policing" of the world by the major powers, would be another matter, one that deserves a more leisurely discussion.

FOR THE moment, hypnovirus is a pipedream. Most BW research is claimed to be defensive. That is, it seeks to anticipate the worst horrors an enemy might de-

velop, then beat him to it so as to know how to defend the population. Needless to say, there is no more ingenious device to ensure the rapid escalation of offensive capabilities.

Whether work is actively proceeding in BW laboratories on producing a hypnovirus, I do not know. They have, however, published abundant reports showing their preoccupation with plague, anthrax, rickettsia, tularemia, encephalitis virus and other equally unpleasant and highly lethal disease agents.

The most chilling thought is that GW research has only just begun to tap the potential offered by chemical genetics for the systematic construction of new disease agents. The announcement of the artificial replication of a virus DNA last December was followed by some rather premature talk about the moral problems of replicating, and altering human DNA. We have a much more immediate concern for the moral problems of the engineering of virus DNA for military purposes.

These anxieties have provoked considerable bitterness in the scientific community and even demonstrations pointlessly misdirected at the Army's biological research laboratories at Ft. Detrick, Md. In recent years, this installation has concentrated on the technology of handling dangerous, infectious materials for research purposes. Its experience is quite valuable for public health work and has been openly published.

NEVERTHELESS, even these positive contributions have a seamier side. The

hazards of dealing with dangerous viruses is one of the few discouragements to keep a smaller country from starting its own BW program. As we develop and publicize this technology, we make easier the proliferation of the darkest arts throughout the world.

The makers of policy in Washington, not the technicians at Ft. Detrick, are the just targets of criticism. And they should be chastised less for any malevolent motives in this field than for mere inertia, for technical unfamiliarity, for blindness to the pace of biological advance and its accessibility to the most perilous genocidal experimentation.

The U.N. has had a long history of abortive attempts to start discussions on the control of BW.

Now, the British delegation has introduced new initiatives for BW controls and, evidently with some reluctance, the U.S. State Department for the first time agreed to substantial technical studies. Time is running out, and too little is left to let BW remain merely another minor pawn whose disposition is incidental to other settlements.

© 1968, The Washington Post Co.